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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/076,404	02/19/2002	Ryuji Sato	Q68583	2141

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EXAMINER	
HENNING, MATTHEW T	
ART UNIT	**PAPER NUMBER**
2131	

DATE MAILED: 12/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/076,404	SATO, RYUJI	
	Examiner	Art Unit	
	Matthew T. Henning	2131	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *9/27/2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-14* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-14* is/are rejected.

7)☒ Claim(s) *3 and 14* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

This action is in response to the communication filed on 9/27/2005.

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 9/27/2005 have been fully considered but they are not persuasive. Applicant argues primarily that:

i. Glover decrypts a separate portion of the file and not the device driver.

ii. Glover did not disclose an initialization process or a release process.

Regarding applicant's argument i. that Glover decrypts a separate portion of the file and not the device driver, the examiner does not find the argument persuasive. Glover clearly disclosed in Col. 9 Lines 25-33 that the virtual device driver decrypts the "hidden information" and Col. 9 Lines 33-35 clearly disclosed that the "hidden information" could be a device driver. Therefore, Glover did in fact disclosed decrypting a device driver. Therefore the examiner does not find the argument persuasive.

Regarding applicant's argument ii. that Glover did not disclose an initialization process or a release process, the examiner does not find the argument persuasive. Glover disclosed an decrypting the hidden information prior to executing the hidden information in Col. 9 Lines 25-35, which is equivalent to the initialization operation of the claim which requires the device driver to be decrypted. Further, Glover disclosed that after execution the decrypted information was re-encrypted in Col. 22 Lines 32-36 and that after execution the data was removed from memory in Col. 10 Lines 45-47, which is equivalent to the release process as claimed and therefore meets the limitations of the claim. Therefore, the examiner does not find the argument persuasive.

All objections and rejections not set forth below have been withdrawn.

Claims 1-14 have been examined.

Title

The title, as amended, is acceptable for prosecution.

Drawings

The drawings were received on 9/27/2005. These drawings are now acceptable.

Specification

The abstract of the disclosure as amended is acceptable.

Claim Objections

Claims 3 and 14 are objected to because of the following informalities: Claim 3 recites "secondarily re-encrypting the *re-enrypted*" which is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-2, and 4-5 are rejected under 35 U.S.C. 102(b) as being anticipated by Glover (US Patent Number 6,052,780).

Regarding claim 1, Glover disclosed a method for operating a device driver (See Glover Abstract and Col. 9 Lines 7-9), comprising the steps of: providing a device driver comprising an

encrypted program code portion of a main process thereof (See Glover Col. 9 Lines 25-35 hidden information); decrypting the encrypted program code portion in an initialization process of said device driver (See Glover Col. 9 Lines 25-35); executing the decrypted program code portion (See Glover Col. 11 Lines 3-5) and re-encrypting the executed decrypted program code portion in an end process of the device driver, in which said device driver is released (See Glover Col. 10 Lines 45-47 and Col. 22 Lines 32-36).

Claim 2 is rejected for the same reasons as claim 1 above and further because Glover disclosed initializing the device driver (hidden information) before decrypting the portions of code (See Glover Col. 9 Lines 16-19 and Col. 10 Lines 19-27).

Regarding claims 4-5, Glover disclosed extracting a numeric value from an application; and a creating key, corresponding to the numeric value, for decrypting and re-encrypting the program code portion in said decrypting and re-encrypting of the program code portion steps (See Glover Col. 21 Lines 32-38).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover, and further in view of Schneier ("Applied Cryptography, Second Edition").

Glover disclosed encrypting a program code portion, decrypting the program code portion, executing the decrypted program code portion, and re-encrypting the program code portion after processing was complete (See the rejection of claim 1 above and Col. 9 Lines 22-24 and Lines 33-35), but failed to disclose encrypting and decrypting with two different keys.

Schneier teaches that double encryption using two different keys provides two times the security of single encryption (See Schneier Section 15.1).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Schneier in the encryption, decryption, re-encryption system of Glover, by encrypting the portion of code with one key and encrypting the result with a second key and decrypting in a reverse manner. This would have been obvious because the ordinary person skilled in the art at the time of invention would have been motivated to increase the security of the encrypted program.

Claims 6-11 rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as applied to claims 1-2 above, and further in view of McManis (US Patent Number 5.757.914).

Regarding claims 6-7, Glover disclosed the device driver communicating with an application (See Glover Col. 10 Lines 34-47), but failed to disclose authentication between the two.

McManis teaches a method for protecting two communicating applications in which before process A calls process B, A authenticates B by verifying the integrity of B, and before B responds to A, B verifies the integrity of A, and in both cases if the verification fails execution is aborted (See McManis Col. 3 Line 53- Col. 6 Line 9).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of McManis in the dynamically loaded device driver by mutually authenticating the calling application and the device driver by integrity verification when a request is made by the application to the device driver. This would have been obvious because the ordinary person skilled in the art would have been motivated to protect the use of the application as well as the use of the dynamically loaded device driver.

Regarding claims 8-9, the combination of Glover and McManis disclosed providing an application, which requests the device driver (See Glover Col. 11 Lines 6-11), utilizing the application to detect whether or not the program code portion of said device driver has been forged before supplying output data to said device driver, and when the program code portion of said device driver has been forged, the application stops outputting the output data to hardware, and utilizing the device driver to detect whether or not a program code portion of the application has been forged before supplying input data to the application, and when the program code portion of the application has been forged, said device driver stops outputting the input data to the application (See McManis. Fig 2 and related text).

Regarding claims 10-11, the combination of Glover and McManis disclosed that said device driver does not decrypt encrypted data of the application, and wherein only when the program code portion of said device driver has not been forged, the application decrypts the encrypted data and provides the decrypted data as the output data to said device driver (See McManis Col. 5 Lines 50-67).

Claims 12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Glover as applied to claims 1 and 2 above, and further in view of Cabrera et al. (US Patent Number 5,978,815) hereinafter referred to as Cabrera.

Glover disclosed a device driver being executed (See Glover Col. 9 Lines 33-35 and Col. 10 Lines 43-47), but failed to disclose the device driver communicating between an application arranged at a user level and hardware arranged at a privilege level.

Cabrera teaches that device drivers are used to communicate between hardware and software and that the software typically runs in a user mode and the driver operates at the privilege level (See Cabrera Col. 7 Paragraph 2).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cabrera in the system for securing device drivers of Glover by having the device driver communicate between a user mode application and hardware arranged at the privilege level. This would have been obvious because the ordinary person skilled in the art would have been motivated to allow the driver to perform many functions that would not be possible from user mode.

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Glover and McManis as applied to claim 3 above, and further in view of Cabrera.

Glover and McManis disclosed a device driver being executed (See Glover Col. 9 Lines 33-35 and Col. 10 Lines 43-47), but failed to disclose the device driver communicating between an application arranged at a user level and hardware arranged at a privilege level.

Cabrera teaches that device drivers are used to communicate between hardware and software and that the software typically runs in a user mode and the driver operates at the privilege level (See Cabrera Col. 7 Paragraph 2).

It would have been obvious to the ordinary person skilled in the art at the time of invention to employ the teachings of Cabrera in the system for securing device drivers of Glover and McManis by having the device driver communicate between a user mode application and hardware arranged at the privilege level. This would have been obvious because the ordinary person skilled in the art would have been motivated to allow the driver to perform many functions that would not be possible from user mode.

Conclusion

Claims 1-14 have been rejected.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew T. Henning whose telephone number is (571) 272-3790. The examiner can normally be reached on M-F 8-4.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Primary Examiner
AU 2131
12/14/05

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12/12/2005